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INTERACTIVE SERVICES TRADE ASSOCIATION INC.

October 21,1998

To: Commission Secretary, Magalie Roman Salas
Office of the Secretary
Federal Communications Commission
1919 M Street N.W., Room 222
Washington , D.C. 20554

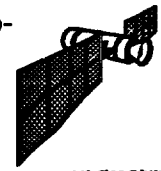
C.C.: Commissioner's & Staff of the Wireless Bureau

From: Don Lounibos
President/ISTA

Subject: Comments before the Federal communications Commission.

In the Matter of Amendment of Part 95 of the Commission's	)	**WT Docket No. 98-169**
Rules to Provide Regulatory Flexibility in the 218-219 MHz	)	**RM-8951**
Service.	)	
	)	
Amendment of Part 95 of the Commission's	)	**WT Docket No. 95-47**
Rules to Allow Interactive Video and Data	)	**RM-8476**
Service Licensees to Provide Mobile Services	)	**(Proceeding terminated)**

Thank you for the time to present these comments. We hope that the information that we have gathered will give a clear picture to our opinions in the matter of Spectrum 218-219 MHz. We as license holders have put together a trade association that represents Small Business, Women Owned and Minority interest. It has been a difficult four years trying to sort out what IVDS was and should be, but at this time we believe that the 219-219 MHz industry is poised and ready to begin its journey into the business world. We look forward to the industry's success and thank the Commissioner and the staff of the FCC for all their profes- sional assistance over the past 4 years.



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Amendment of Part 95 of the Commission's Rules to Allow Interactive Video and Data Service Licensees to Provide Mobile Services	)))	**WT Docket No. 95-47 RM-8476 (Proceeding terminated)**

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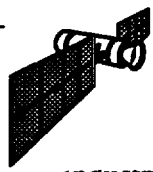

Sincerely

Don Lounibos

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ISTA

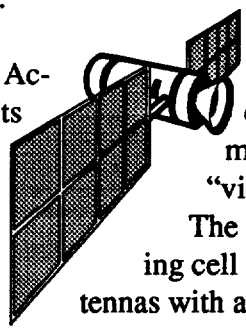
INTERACTIVE SERVICES TRADE ASSOCIATION

October 13, 1998

Subject: Comments in the matter of Amendment of Part 95 of the Commission's Rules to provide Regulatory Flexibility in 218-219MHz Service. Amendment of Part 95 of the Commission's Rules to Allow Interactive Video and Data Service Licensee to Mobile service. WT Docket No. 98-169 RM-8951 & WTDocket No. 95-47 RM-8476 (Proceeding terminated)

From: Don Lounibos, President of ISTA

At this time ISTA (Interactive Services Trade Association) would like to thank the Staff of the Wireless Bureau and in Particular Miss Christina Eads Clearwater and Mr. Howard C. Griboff for the unrelenting commitment to working with the IVDS license holders and to make changes to the IVDS spectrum that would benefit all those concerned. Our thanks to Michelle Farquhar and Daniel B. Phythyon for their sincere commitment to make IVDS a spectrum that benefits all concerned.



Background: Report No. DC-2169 Action in Docket Case dated July 16, 1992 the FCC clarifies certain aspects of Interactive Video Data Services rules (Gen. Docket 91-2) In this statement the commission revisited the rules by substituting the phrase "video and data delivery systems" for broadcast and cable operations. The commission will also allow IVDS licensees more flexibility in locating cell station antenna; allow the use of higher cell transmitter station antennas with a corresponding reduction in power; and allow home units to use outside antennas.

In the Order adopted January 16, 1992, the commission established a frequency allocation and the service rules for the IVDS . The purpose was to make available an allocation of radio spectrum that licensees could use to provide a variety of radio-based interactive services to the public. IVDS licensees may provide two-way interaction with commercial and educational programming, along with information and data services that may be delivered and coordinated with, broadcast television, cable television, wireless cable, direct broadcast satellite, or any future television or data delivery method. A number of petitioners sought

reconsideration of that decision.
TV Answer and Radio Telecom and Technology, Inc. sought reconsideration of various technical and operation rules such as power and antenna height limitations. Leonard Yaeger and Frank Kimball, and Richard L. Vega sought reconsideration of the initial application and lottery process and questioned the appropriateness of the fee charged to entities entering the lottery. Also, Fisher, Wayland, Cooper, and leader sought clarification of the rules regarding preparation for license applications.

Although, the Commission clarified certain aspects of the rules, as requested by the petitioners, it declined to reduce application fee for entering the lottery, or to require all applicants to prepare application forms as a condition of entering the lottery.

Action by the Commission July 16, 1992, by Memorandum Opinion and Order (FCC 92-331). Chairman Sikes, Commissioners Quello, Marshall, Barrett, and Duggan.

Recent Article in the Washington Post
by Mike Mills
Monday, February 17; Page A01

"The federal government had told women, minorities and small-business owners that a special "access ramp to the information superhighway" would be opened to them. But a 1994 federal auction of hundreds of licenses to offer interactive television has instead proven to be a bad dream both the "winners" of the auction and the auctioneer, the Federal Communications Commission.

After more than four years, not a single person who owns an Interactive Video and Data Services (IVDS) license has a paying customer. Instead, one-fifth of the 594 licenses have been repossessed for nonpayment and dozens of small businesses are on the verge of financial ruin.

Many of the bidders had no experience in the telecommunications business and relied almost entirely on the FCC for information about the service's future prospects. Many were buoyed by the fact that the commission was portraying these licenses as a good way for women and minorities to enter an information-age business. One document said that "it will have a major impact on our society in the 21st Century."

In perceiving competitive bidding regulations, congress directed the commission to ensure that small businesses, rural telephone companies, and businesses owned by members of minority groups and women are given the opportunity to participate in the provision of spectrum-based services. 47 U.S.C. 309 (j) (4) (d).

Since the 1993 mandate to ensure that designated entities are given the opportunity to participate in the provision of spectrum.-based services, congressional and Supreme Court actions have narrowed the options for fulfilling this mandate. In 1994, congress repealed Section 1071 of the Communications Act, voiding the Commission's tax certificate program. In 1995, the Supreme court held in Adarand Constructors, Inc. V. Pena that "all racial classifications...must be analyzed by a reviewing court under strict scrutiny." In 1996, the Supreme Court held in United ?States V. Virginia that a state program that makes distinctions on the basis of gender must be supported by an "Exceeding persuasive justification" in order to withstand constitutional scrutiny. Because the record developing promulgating rules to promote Section 309 (j)'s objectives did not assume application of a "strict scrutiny ," the Commission narrowed the provisions for minority- and women owned businesses to provisions benefiting small businesses.

- **We believe that these measures have allowed small businesses, including those owned by women and minorities, to overcome barriers that have impeded these groups.**

- **We believe these actions will allow a variety of entrepreneurs to participate in the provisions of wireless services, and that the innovation by small businesses will result in a diverse service offerings that will increase customer choice and promote competition.**

- **We support the Commissions implementation of service specific definitions for small businesses, the outreach efforts by the FCC Office of Public Telecommunications Development Fund (TDF), and the commissions comprehensive study to further examine the role of small businesses and businesses owned by minorities and women in the telecommunications industry and the impact of FCC policies on access to the telecommunications industry for such business.**

- **We believe Section VI. E and F. Will allow the entry of very small business entities to participate in a affordable slice of the spectrum which can be afforded and offer at the same time pride of ownership and involvement in a new industry. (Stepping Stone Mythology)**

VI. G. Technical Standards. Spectrum in the 216-218 MHz bandwidth is used for diverse transportation, military and personal radio services. The primary use of this spectrum has been Automated Maritime Telecommunication Systems (AMTS) for ship operational traffic. The FCC has defined AMTS as a "an automatic, integrated and interconnected system serving ship stations." AMTS provides voice and data public correspondence service on specific frequencies allotted to AMTS. This service is principally used by the tug and towboat industry on the Mississippi and Inland Waterways. Their uses of this spectrum include wildlife and ocean ship tracking and telemetry, radio locations, fixed and land mobile uses and aeronautical telemetry and remote control.

Most IVDS applications now being considered, the transmitter is not co-located with a TV receiver. The Commission identified the danger of near field interference early in the formation of its technical rules.[1] The potential for interference, especially when transmitting short impulse signals containing rich harmonics, exists when the transmitter is close to the TV set. On account of early proposed applications for these frequencies and the relative proximity of IVDS to channel 12 and 13, the Commission prudently conditioned use of these frequencies with limitations of both transmission duration and power levels from the Remote Transmitting Units (RTU's). At that time, the proposed applications were interactive Television, with a set top box located very close to the TV.

• **We support the commissions use of power control at the Remote Transmitting Unit for two way applications to optimize spectrum reuse but would like the commission to eliminate the power limitations of 100 milliwatt and allow the power to increase as the distance increases and also to eliminate the power control in all one way applications and replace the power control with a pre programmed zone control switch. This would keep cost down and allow more affordable applications to be used by the spectrum.**

Susceptibility to interference is much higher when using old model television receivers manufactured more than 10 years ago. These sets had little shielding to prevent high level, out-of -band signals from causing interference on high band VHF channels (7-13). For economic reasons, most receivers manufactured back then were built with un shielded "Flat Ribbon" or "Twin-lead Wire", used to connect a rabbit ear antenna or roof top antenna to the input of the tuner. In many cases, this lead-in wire acted more like an antenna than a transmission line. The analogy is "local pickup, or ghosting" which is today seldom seen, because modern television receivers us coaxial cable to input antenna signals to the tuner.

1 EVALUATING THE POTENTIAL FOR INTERFERENCE TO TV FROM STATIONS Of INLAND WATERWAYS COMMUNICATIONS, Prepared by R. Echert, FCC/OST, july 1982

Imposed Technical Restriction: The FCC has approved mobile applications for IVDS which make it tough to compete with other two-way paging companies. Broadcasters, Cable companies and DBS companies have no need of an IVDS return path, they have their own. We as small business cannot compete against these large companies who have imposed duty, power and mobility restrictions on our frequency. It was anticipated that IVDS would provide these companies with a return path where in fact they no need of our service. After all, there is only a nominal amount of bandwidth for IVDS. The FCC will allow mobility in IVDS as an ancillary business and not a primary function of the spectrum. There is a 100 milliwatt power output restriction on mobile RTU's and in addition any one RTU is restricted from transmitting more than one percent of one mille second at a time, or a total of not more than 5 seconds per hour. Because of technical restrictions or unproven market applications, a number of IVDS auction winners have defaulted on license payments to the Commission. These licenses were to be re-auctioned early 97, but the FCC decided to defer this and first

revisit technical restrictions imposed on this spectrum in order to stimulate its growth. Internally, the FCC has recently reviewed the technical specifications of IVDS and some of the current restrictions in order to provide technical relief to spectrum holders and stimulate commercial applications. The duty cycle, power output and mobility are the three most likely topics in need of regulatory change. There are good engineering reasons to consider lifting all three restrictions. They were originally imposed because the IVDS transmitter was expected to coexist on top of the TV receiver; potentially creating interference with channel 12 or 13. Since the industry has mostly abandoned applications using interactive TV and placing the transmitter some distance from the TV set, (Report No. DC-2169 Action in Docket Case dated July 16, 1992 the FCC clarified certain aspects of Interactive Video Data Services rules (Gen. Docket 91-2) FCC grants permission to place the antenna outside the house, the possibility of interference is greatly reduced, if not completely eliminated.

Elimination of the Duty Cycle, power and remote RTU restrictions and changing or eliminating the term ancillary applications will enable service providers the opportunity to use new QAM 64 modulation rather than TDMA for fixed remote applications with better footprint coverage and the elimination of an EON Cellular footprint with many transmitters placed in 1.8 mile configurations. This will eliminated the exorbitant price of building a milliwatt EON type system. Elevated antennas (20-30) foot up on telephone poles or even directional arrays at some distance from TV sets, virtually will eliminate interference. This would eliminate the need for rather low duty cycle transmissions which will prevent "Choking" the bandwidth. This would give good propagation from the home to the pole to the CTS. The Home Automation Industry, Commercial Data , Wireless Mobile Remote Data Applications will be the direct benefactor of such changes.

It seems now, after so many years, that the IVDS community has finally realized that while its bandwidth does some things very well, it is not well suited to more traditional telecommunications uses. The industry has learned that it should not attempt to compete with broadcasters, paging companies, satellite companies, cellular companies or even internet providers.

Over 60% of homes now receive television by either CATV and DBS, with signal levels higher when compared to typical off-air signals, further mitigating chances for interference. In addition, modern TV receiver designs use Surface Acoustical Wave (SAW) filters which achieve near optimum selectivity without the need for tuning. These filters are now used universally in receivers built over the last 6 to 12 years because they have both economic and technical advantages. SAW filters give TV sets improved selectivity, providing much greater immunity to out-of-band interference which might occur from strong 218-219 MHz IVDS signals.

Resolution to the problem seems to be in the fact that the commission has approved the movement of the antennas outside the house. It is also possible, in many cases, to use directional antennas, further reducing potential for interference as well as optimizing spectrum

reuse. Many applications will place RTU transceivers a common strategic points to aggregate multiple subscribers with a single RTU Transceiver. The typical case is an RTU that outputs a maximum of 1.5 watt and is mounted on a utility pole or a directional vertical gain antenna placed on a moving object.

It is well understood that attenuation of RF emissions grow rapidly with distance because signals weaken with the square of the distance traveled. Another words, each time the distance is doubled, the energy reaching the receiver is on - quarter as strong. Therefore, assuming the most pessimistic model of free-space attenuation, the effective power level presented to the TV set from a 1 watt transmitter mounted 50 feet (or about 15 wavelengths) from the TV set would be 0.01 watt; or a level reduced by a factor of more than 100.

To further evidence this power reduction and hence potential interference of channel 12 or 13, Young Design Inc. and Berkley Varitronics Inc. measured susceptibility with a number of TV receivers. Several models and vintage receivers were evaluated to determine at the level views can perceive disturbances from the IVDS modulated signal.

The test setup used a power divider with tow inputs; one to feed a visually weak TV signal from channel 13 (210 MHz to 216 MHz and the other input from a modulated signal generator with controlled output and frequency. The test procedure was to vary both the frequency and the interference level from the signal generator while carefully monitoring the picture quality to determine the first point where any noticeable deterioration of the picture or sound was detected. This point was then platted on a graph indicating both frequency and level limitations. The results of these tests are included at the end of this document.

Conclusion of the tests indicate that the potential for IVDS interference is virtually eliminated if the transmitter is separated from TV sets for a distance of 50 or more feet, irrespective of the duty cycle or duration of radio transmissions. This was also born out by simple demonstration presented at the Commission meeting room held by ISTA for license holders and manufactures on March 17, 1997.

Berkley Varitronics concludes through their experience and test data conclusively that the duty cycle restriction presents unwarrantable hardships to deployment of business applications for IVDS because the applications have changed along with substantial improvements in television receiver technology.

- **We also agree that AMTS has operated mobile 216-218 MHz devices without any apparent interference complaints from other industries.**

- **We also would suggest that directional vertical gain antennas be allowed with no power control restriction in excess of 4 watts for vertical satellite applications. All (VVT) transmitted signal are directed vertically rather than horizontally. "Virtual**

FCC IVDS REGULATORY ISSUES

I. SUMMARY OF ISSUES

Issue #1: One-way IVDS Systems
The FCC needs to specifically allow for one-way IVDS systems. (Remote to Base in particular.) We request that the Response Transmit Unit (RTU) be redefined to a more generic name such as a Remote Terminal Unit or Remote Transmit Unit. Also, in one-way systems, cell sites be called Base Receive Sites (BRS).

Issue #2: RTU Transmitter Power Control (Para 95.855 (a))
We request the word "automatic" be removed from the first paragraph in 95.855 (a). Unless we get relief from this requirement, one-way IVDS systems cannot be effectively implemented. This is because the RTUs without a receiver cannot get feedback from a base site as to whether the signal got through with a selected power setting. We propose a manual or variable setting fixed at time of installation.

Issue #3: Transmitter ERP limitations for mobile RTUs (Para 95.855)
We need to increase mobile RTUs ERP to 4 watts. With only 100mW, there would simply be too many CTS required to cover an MSA. This would make the build-out cost for a system prohibitive, as EON found out, when they went to deploy their "Multi-watt" device.

Issue #4: CTS ERP (Para 95.855 (b))
Based on field test performed by YDI and others, we want to increase the maximum CTS ERP in all Grade B channel 13 Service Areas to at least 4 Watts ERP. Perhaps as a compromise to MSTV, we could have a restriction like the distance to the nearest residence with an outdoor TV antenna were *xx* feet away?

Issue #5: Duty Cycle for RTUs (para 95.863)
By only relieving this restriction in MSA's with no channel 13 TV stations essential eliminates about

II. BACKGROUND

In an effort to virtually guarantee that there would never be any harmful interference to off-the-air TV channel 13 reception, the Technical Specifications for IVDS equipment are so restrictive that to date, except for a few demonstration systems deployed by a handful of manufacturers, no full systems have been deployed anywhere. As evidence of how restrictive the Technical Specifications are, four years after the first licenses issued and hundreds of millions of dollars spent by licenses and manufacturers in developing IVDS equipment and applications, there is **not one single IVDS system** effectively deployed, let alone providing any service or making anyone any money. Noticeably absent

all these years are the large radio communications equipment manufacturers. They studied the technical specifications and restrictions and simply stayed out of IVDS altogether.

Even EON (formally TV answer) whose efforts spearheaded the creation of IVDS and whose equipment met all the technical requirements ultimately were unable to field an IVDS system. In fact, of all the manufacturers that were ever involved in IVDS equipment only a few small companies are still actively attempting to market their IVDS equipment..

Indeed the public interest has not been, nor will be served and unless technical specification and restrictions are relaxed. Licenses and manufacturers alike are all losing interest, cutting their losses and giving up on IVDS.

The petitioners are sensitive to the interests and desire of NAB and MSTV in the matter of TV inference (TVI). In fact, we have met with MSTV staff for the purpose of reaching an informal understanding and compromise to produce FCC rulings that both the IVDS and the broadcast can live with.

It is also clear that the original purpose of IVDS, i.e., to provide a return wireless return path for interactive broadcasting, has not and will likely never materialize. Ironically, the current potential and completed applications for IVDS are now all related to systems and applications outside the home and away from television sets.

Because of all the above considerations and more, it is requested the Commission accept and make into law the requested changes in the technical specifications outlined herein.

III. THE INTERFERENCE ISSUES

One of the fallacies of NAB's previous position of interference is their a 100mW ERP IVDS signal can cause interference that harmful interference at a 63 foot distance from a TV.[4]

This is simply not the case. Tests by YDI[6] and Berkeley Varitronic Systems, Inc.[7] both conclude that a 1 Watt ERP IVDS transmitter at a 100 foot distance to a TV antenna in a Grade B channel 13 reception area does not cause harmful interference. Further, the YDI field tests show that a 100mW ERP signal (10 dB lower then 1 Watt) does not cause harmful interference at a distance 40 ft from a TV antenna.

These tests were done in free space with unobstructed line of sight between the IVDS transmitter antenna and the TV antenna. Should any obstacle come in the way between the two (such as walls for indoor antennas) the signal strength will be reduced even more .

Thus if all parties can agree that at 100 feet from a TV antenna, a 1 Watt peak ERP signal is acceptable, then we have a baseline from which transmitter power levels can be determined.

IV. REQUESTED CHANGES TO FCC TECHNICAL SPECIFICATION

The following is a list of issues and requested changes:

Issue #1. One way IVDS Systems

Provided all other Technical Specifications are met, we request the regulations specifically state that one-way IVDS systems (i.e., not interactive) are a permissible use of the spectrum.

There is a tremendous market for simple, inexpensive and reliable one-way reporting systems. Applications such as automatic meter reading, street light monitoring, vending machine reporting, drop-box reporting, security alarm systems and a myriad of other applications all lend themselves to a one-way non-interactive uplink.

If IVDS regulations solely mandate two-way data link, it would have very tough competition in the marketplace. It would compete with CDPD, Ardis RAM, Ericson's Mobetix, Cellmetry and other two-way data packet data services. All of these services already have national footprints, equipment in production and an infrastructure in place. And they all are not meeting their market While 218 Mhz has excellent propagation characteristics as comparable to 800 Mhz, it is not a "miracle" frequency. Numerous CTS sites will need to be constructed to serve as MSA. Certainly not as many as a 800 Mhz cellular or PCS system, but still a considerable number will be required to provide the reliable coverage the public demands. There is considerable concern as to whether in investing in such an infrastructure (let alone developing the RTUs) would do well in the marketplace in face of stiff entrenched competition. An inexpensive one-way system reduces the cost of the remote unit and the base site significantly to the point where the system can be deployed that is affable. Thus valuable services that lend themselves to one-way reporting can be offered to the public at significantly less cost then the two-way data service already established.

Issue #2: RTU Transmitter Power Control[10]

We request the word "automatic" be removed from the first paragraph in 95.855 This is needed for one-way IVDS systems. This is because the RTUs without a receiver cannot get feedback from a base site as to whether the signal got through with a selected power setting. We propose a manual or variable setting fixed at time of installation.

Issue #3: ERP for Mobile RTU[11]

In order to satisfy NAB/MSTVs concern for mobile operation, we request that the term "mobile" be redefined for use in these regulations or a new term be used to describe "other then fixed" RTUs. Such a definition would restrict these "other then fixed" RTUs to be used only in

commercial, industrial or vehicular applications, and cannot be used in or around a household.

Issue #4: CTS ERP[1 2]

Considering the acceptable power level verse distance from a TV antenna discussed earlier, a CTS could reasonably increase its ERP based on its distance from the nearest home. Every time the distance from the CTS to a home is doubled the free space loss and hence the signal strength decrease by 6 dB. Every time this distance is doubled, allow a 3 dB increase in ERP. Therefore, if you double the distance, and only double the power the result is an additional 3 dB decrease in the field strength at the target home For example, If we can agree that an ERP of 1 Watt at 100 ft from a home results in an acceptable field strength.

DisanceFeet	Erp	FS Loss	Safety Margin
100	1W	50db	0db
200	2W	56db	3db
400	4W	62db	6db
800	8W	68db	9db
1600	16W	74db	12db

Specifying minimum techincal requiremnts will allow the devlopment of innovatice technologies while reducing the potential for harmful interference to voice and data

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In the Matter of Amendment of the Commission's Rules concerning Maritime Communications PR Docket No 92-257 Rm-7956,8031,8352. Second Report and order and Second Further Notice of Proposed Rule Making Adopted: June 17, 1997

In Section. III. Second Report and Order A. Operational Flexibility--Public coast station spectrum (3) Serving stations on land

21. It is so stated Proposal. In 1986, the Commission declined to adopt rules that would permit VHF public coast stations to serve vehicles on land on a subsidiary basis. Since that time, however the Commission has granted several waivers allowing individual public coast stations to serve a limited number of land vehicles on a secondary basis and, to date, has received no complaints of harmful interference to marine communications from these operations. In the Further Notice, we proposed to permit VHF public coast stations nationwide, including Automated Maritime Telecommunications Systems (AMTS coast stations, to provide service to land vehicles, on a secondary basis, under

their current coast station license. Under our proposal, land vehicles would be required to use radio equipment type accepted under Parts 80, 90, or 22 of the Commission's rules to include hand-held and mobile units not necessarily located in vehicles. MMR points out that this increased flexibility is consistent with the Commission's treatment of other mobile services licensed under parts 22 and 90 of our rules. Similarly, MariTEL asks the Commission to permit service to mobile units on land without limiting the number of mobiles to be served by a particular public coast station.

23. Decision, In 1986, we decided not to adopt rules that would permit public coast stations to serve vehicles on land based on three substantive objections from commentators: (1) the potential for harmful interference caused by vehicles operating on frequencies not assigned to the associated public coast station; (2) the potential for harmful interference from inter-vehicular communications on maritime frequencies; and (3) the inability of public coast stations to determine the origin of radio calls (e.g., from vessels at sea or from vehicles on land). Some ten years later, however, commentator within the maritime community vigorously support allowing public coast stations to serve units on land. Additionally, the objections stated previously are no longer a concern because of the advanced capabilities of today's contemporary radio equipment. For example, land units may be programmed to transmit only on the channels assigned to an associated public coast station, eliminating the potential for interference to other public coast stations and preventing direct communications between units on land. Further, electrical or mechanical means priority to maritime communications. For example, a network of directional antennas, satellite or terrestrial positioning data, or codes embedded in the radio signal could be used to determine whether the signal originated from a vessel or a land units.

24. We conclude that it serves the public interest to permit VHF public coast stations, including AMTS stations, to serve units on land, both fixed and mobile (including had-held units). Increasing operational flexibility in this manner expands the range of communications services public coast station licensees may offer and fosters a regulatory environment in which public coast stations may more effectively compete against other CMRS providers, such as Cellular, PCS and SMR, operating in coastal areas which presently have no restrictions on serving vessels located in each CMRS licensee service area. Further, as the commentator pint out, allowing public coast stations to serve land units will not decrease vessel safety so long as priority is given to calls originating from vessels.

25. Based on the comments, we also conclude that there is no reason to limit the number or types of land units to be served. Our initial goal in this proceeding was to permit public coast stations to make use of excess channel capacity. This goal may be achieved by requiring public coast stations to give priority to maritime traffic, without regard to the number of land units being served. Further, as MMR points out, there is no reason to restrict service only to units installed in vehicles. For example, persons may wish to use hand-held units or fixed units connected to an external antenna, So long as such units are used under the same power limitations as Marine Radio (25 Watts) and their antennas are not mounted higher than those on vessels, (350') there is no increased potential for interference to maritime

communications. Therefore, we will permit public coast stations to serve units on land, including fixed, mobile, and hand-held units, subject to certain minimum operational requirements.

Use of PSN or CMRS for Internal Control Purposes: Sec. D. 2.(24) Page 16. Under the current rules, mobile RTU's are prohibited from interconnecting with the PSN or CMRS providers. The Commission did not define the phrase "interconnection with the PSN" when it adopted this rule, we seek clarification and parity with other CMRS services and neighboring spectrum. 216-218 MHz

As stated on December 15, 1995, Commissioner Susan Ness said: Re: Interconnection between local exchange carriers and commercial mobile radio service providers. This notice forcefully expresses our intention to promote maximum opportunities for Personal communications services ("PCS") to flourish as quickly, simply , and fairly as possible. PCS has the potential to provide much-needed competition to both cellular and wireline local exchange services. Our PCS bandplan and our PCS auctions are important milestones, but they alone cannot bring us to the goal of strong PCS competition. Without

PCS and other providers of Commercial Mobile Radio Services ("CMSR") unquestionably should enjoy fair and reasonably priced interconnection to the public switched telephone network. Today, there is a very real danger that wireline local exchange carriers ("LECs") will delay the resolution of interconnection issues or charge too much for interconnection services. Indeed, their are disturbing reports that LECs are not currently complying with our existing requirement for mutual compensation between wireline LEC"s and cellular carriers.

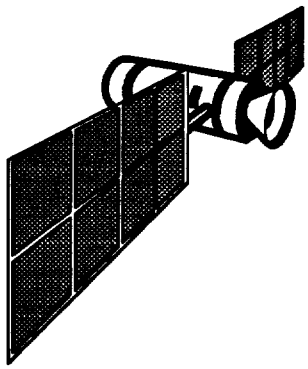
Commissioner: Susan Ness

WT Docket No.95-47 In the matter of Amendment of Part 95 of the Commission Rules allow IVDS Licensees to provide mobile service to subscribers. RM-8476.

EON states that it has redefined its technology and redesigned its system to use passive receive-only microcells which will relay the receive-only microcells which will relay the received RTU signal to the base station network via land lines. According to EON, the most significant benefit of this refinement is that the maximum transmitter power of all EON RTU's can be reduced to 100 milliwatts ERP. EON argues that these refinements eliminate the need for the subscriber to remain near his or her television set or within enclose" to obtain service and permits IVDS licensees to provide cost-effective mobile service.

Radio Telecom and Technology, Inc. (RTT) and ITV, Inc. (ITV) also filed comments in response to EON's petition. RTT argues that EON's proposal raises serious questions about the basic technical nature., interference potential and ultimate use of IVDS....RTT also states that any power limits on IVDS mobile operation should be in terms of average

power rather than peak power, because average power more accurately depicts interference potential. ITV supports EON's petition, but notes that if mobile operation is allowed, the Commission will need to determine weather to regulate IVDS as a Commercial mobile radio service . EON filed reply comments reiterating the benefits of mobile operation and noting support from MSTV.



- We propose that the word ancillary be dropped. 218-219 be granted CMSR status or Private Radio. The 100 milliwatt restriction be changed to that same restrictions placed on 216-218 MHz 25 watts fixed and mobile, and that inter connect to the LEC be allowed the same as that allowed to 216-218 MHz

- We request the same operational flexibility in Power, Antenna ERP, and Mobility that has been granted to Spectrum 216 MHz - 222 MHz.

- We request the same operational flexibility Granted Spectrum 216 MHz - 222 MHz in allowing land units to be type accepted under Part 80, 90 or 22 of the commissions rules and must be limited to 25 watts transmitter output power. 218 Mhz-

- We request the commission to grant the same opportunies extended to our neighboring spectrum which is closer to channel 12-13 than IVDS. Namely the ability to offer Unlimited mobility at 25 watts on a primary bases and to offer the same service to Maritime Ships from land based vechicles as does spectrum 216MHz-218MHz.

- We believe that the 100 Milliwatt restriction creates a bigger problems than what it solves. How do you build a remote 100 Milliwatt system that works? Mobile RTU limited power would result in forward error correction and collision problems leading to defective products.

- We believe the name IVDS should be changed to reflect the true purpose of the spectrum, Wireless Data 218-219 MHz or 218-219 MHz Service.

- We believe that the engineering regulatory perimeters have been to narrow as to only benefit a particular manufactures technology. We believe that these limitations have prevented the interest of potential manufacture for building equipment for the spectrum. We believe that changing the verbiage to reflect "all interference issues will be resolved by the interferant party" "the licensees of both systems must cooperate and resolve the problem by mutually satisfactory arrangements. If the licensees are unable to do so, the commission may impose restrictions.

- We believe Section 95.863 Duty Cycle. The maximum duty cycle of each RTU shall not exceed 5 seconds per hour, or , alternatively, not exceed one percent within any 100 millisecond interval. Should be eliminated.

- We believe that the mobile RTU limitation of Power (100 Mw) should be reinvestigate. We believe that the spectrum 216Mhz-218Mhz has operated in a channel 13 environment without any substantial interference or complaints.

C. Automated maritime Telecommunications System (AMTS) Spectrum

AMTS is a specialized system of public coast stations providing integrated and interconnected main voice and data communications, somewhat like a cellular phone system, for tugs, barges, and other commercial vessels on waterways. AMTS stations are allocated spectrum separate from the marine VHF (156-162 MHZ) and high seas band public coast stations discussed above e. Presently, there are forty frequency pairs in the 217-220 MHz band available for assignment to AMTS stations. The assingment frequencies are divided into two frequency groups--Group A and Group B-- each with twenty channel pairs. AMTS stations are also licensed by rule to use the 216.750-217 MHz band for low power point-to-point network control communications under the low power radio service in part 95 of the FCC rules.

AMTS licensees must provide continuity of service to either: a substantial navigational agree along the Pacific, Gulf of Mexico, or Atlantic Coastline; sixty-percent of one or more major inland waterways; or an entire inland waterway less than 240 Kilometers (150 miles) long. Presently there are three AMTS licensees; Watercom serving the Mississippi River System and Gulf of Mexico; and Orion and PSI serving the Atlantic, Pacific and Hawaiian coastlines. PSI and Orion also have applications pending before the Commission to provide service to a portion of the Great lakes.

Siting flexibility in the AMTS. Because AMTS coast stations operate adjacent to television broadcast spectrum., the commission must consider the potential for harmful interference to television reception prior to authorizing new AMTS sites. Presently, AMTS applicants proposing to locate a new transmitter within 169 Kilometers (105 miles) of a channel 13 television station or within 129 Kilomenters w(80) miles) of channels 10 television station or with an antenna height greater than 61 meters (200 feet) above ground must submit to the Commission an engineering study showing the means of avoiding harmful interference to television reception. In addition, such applicants are required to notify each channel 13 or channel 10 television station which may be affected in order to provide broadcasters an opportunity to comment on the proposed construction. Nonetheless, the Commission has placed the burden on AMTS licensees to rectify harmful interference to television reception, or cease their operations.

As AMTS telecommunications services have become more popular, the need to rapidly construct new sites has increased. AMTS licensees such as Orion, however, feel that the present authorization process for new AMTS sites is burdensome and constructs an unnecessary barrier to the provision of telecommunication services to the maritime community.

For example: on March 5, 1996, Orion filed a Request for Advisory Opinion (Request) with the Commission concerning service to stations at remote fixed locations. In its Request, Orion points out that Section 80.453 (b) of the Commission's Rules, 47 C.F.R. 80.453 (b) of the Commission's Rules, 47 C.F.R. 80.453 (b) provides that "public Coast

stations are authorized to communicate with a designated station at a remote fixed location where other communication facilities are not available." Orion notes that it is aware of the existence of a number of remote fixed locations within the areas served by its AMTS stations etc... Point being:

- **The specific treatment of IVDS licensees to interference issues in relationship to TV channels is unequal regulatory burden compared to those placed on competing CMRS providers. (AMTS) There may be instances where IVDS licensees could benefit from a more flexible authorization procedure and description of technical limitations, such as the 5 sec. Duty cycle, ERP power restriction, and 100 milliwatt Remote Transmitter Unit power limitation, so long as such a policy does not result in harmful interference to television reception.**

- **It is generally accepted that the placement of AMTS transmitters has not resulted in interference to television reception. AMTS and IVDS should agree with the Commission that in the case of interference that the interfering party will take steps to remedy such a situation.**

- **As noted on Page 27 of FCC document Pr Docket No. 92-257 Rm- 7956, 8031, 8352, Only those transmitters proposed to be located near a broadcast station or higher than 61 meters require an engineering study and broadcaster notification. These criteria were developed more than a decade ago based on technical characteristics of analog NTSC transmissions and "average" television receivers.**

- **The separation criteria, and developed technical limitations (e.g. 5 Second Duty Cycle, Transmitter heights, effective radiated power, and 100 milliwatt Remote Transmitter Unit) should be changed to reflect since analog television receivers have improved sufficiently since that time such that the Longely Rice Report was written.**

- **We as licensees would look for greater parity in the treatment of neighboring spectrum's so as to better reflect the similarity in the potential of television interference by AMTS and IVDS. The diametrically opposing standards for IVDS and AMTS technical requirements limit the kinds of technologies that can be used by the licensees and the types of services that may be offered to the IVDS community.**

Should the Commission redesignate the spectrum currently allocated to IVDS?

- **Yes. The name originally given to this band of service implies that only certain applications could be developed in 218-219MHz. This name does not reflect the wide array of different types of service that are available to the spectrum. We would suggest that the name be changed to Wireless 218-219 MHz Service.**

Should the Commission revisit the regulatory status of 218-219MHz service. (Currently a private Radio Service)

- **Yes. The service should be broadened to include Common Carrier and Private Radio Service. The election of regulatory status would open the spectrum to market demand and is consistent with the Commission's regulation on emerging telecommunications services.**

Should the Commission propose extending license terms from 5 to 10 years?

- **Yes. To demonstrate substantial service within the ten years of license grant would result in less Regulatory Paperwork and staffing demands on the Commission.**

Should the Commission change the rule on ownership control of both frequency segments A and B by one licensee in a single market?

- **Yes. The current ban on dual (A&B) ownership was established to create competition within the industry. The current market demands deem this restriction of little value. The introduction of Partitioning and Disaggregation will allow small business's the opportunity to enter into the telecommunications industry. This will not pose a threat or competitive harm to other technologies.**

Should the Commission introduce partitioning and disaggregation for 218-219 MHz Service licensees?

- **Yes. This would allow Small businesses entry access but the Commission should guard itself from the potential for competing factors from fighting to block the full development of the licensee whether it be the A or B, or a disaggregated portion of either. The unjust enrichment payments should be brought into greater parity with other auctionalbe services. The debt requirements should also be extended to allow the partitioned factions be allowed or required to assume debt risk independently and sperate to the partitioning licensee's. Assumption of debt must be managed by a economic qualification process for the aggregating entity. All license holders should be economically qualified for ownership of a FCC License. (Credit standing, Dun and Bradstreet, past criminal record)**

Should the Commission see relaxation or elimination of the technical restrictions currently in place for the 218-219MHz Service?

Yes, The commission should make changes upon the current technical limitation placed on 218-219 MHz to better reflect the technical limitations places on the neighboring spectrum of 216-222 Mhz who have no duty cycle, ERP limitation or limitation on Mobility. (25 watts CTS or RTU with no antenna height restrictions under 60 meters). The NAB or MSTV presents no evidence or examples that interference would be or has been caused to TV Channel 13 as a result of RTU or CTS Transmissions in the spectrum 216-222 MHz.

CTS -to- CTS communications and Section 95.861 I.E. please refer to In the Matter of Amendment of the Commission's Rules concerning Maritime Communications PR Docket No I 92-257 Rm-7956,8031,8352. Second Report and order and Second Further Notice of Proposed Rule Making Adopted: June 17, 1997. (P.P. 9) Greater parity between competing spectrums should be adopted in order to offer diversified services.

Use of PSN or CMRS for Internal Control Purposes

- **We propose unrestricted use of the RTU to the CTS with interconnection to the PSN or CMRS for data applications. This would provide internet IP addressable applications to be preformed on the 218-219 MHz spectrum.** - **We recommend that the Commission provide for maximum flexibility to the 218-218 MHz in order to provide the greatest benefit to the public. We believe that these requirements constitute unnecessary and burdensome regulations on 218 -219 MHZ licensees and places an undue burden on the agency.**

Regulatory Status and Permissible Communications

- **We believe that authorizing a wide variety of services comports with the Commissions statutory authority and serves the public interest by fostering the provisions of mixed services. The wide variety of choice offered other spectrum in order to offer a broad range of use.**

- **We agree that the license holder or holders, Partitioned or disaggregated should determine what application is of best interest to their business plan to provide new and inventive services to the public. The service should not be limited to CMRS, Private Mobile Radio Services (PMRS), a common carrier fixed service, or a private fixed service. Filing status should state the service that is be provided.**

License Term

- **We agree that Section 95.811 (d) should be changed to note that a ten-year license term to comport with the new status of services provided and to ensure regulatory parity.**

Reamortization of Installment Payment Debt

- **We tentatively conclude that it is in the public interest to permit reamortization of principal for non-defaulted 218-219 MHz service licensees in conjunction with the extension of the license term from five to ten years.**

- **We believe that the interest payment should also be reamortized to five years rather than remaining at two years to better reflect spectrum parity between the original terms of the PCS auctions and to enable small business's to plan a capitalization plan that will enable them the time Partition or Disaggregate with adequate capital. We believe short notice at this time we create and unnecessary hardship on small business's. We agree that all eligible license holders should execute a promissory note and security agreement as a condition of participating in the installment payment plan. We would also let be known that the licensee's has the right to find outside funding of the loan that would be subordinated to the US Treasury Loan.**

Service and Construction Requirements

- **We believe that it is the responsibility of the License holder to make good on his investment for the company and its investors. A profitable service can only be achieved through the deployment of substantial service. If a license holders actions can be determined as to prevent substantial services intentionally than the Commission has the right and duty to reclaim the license and impose fines. The licenses holders should be required to file a construction report, listing the type of equipment, cost of the equipment, and application of the equipment at the end of the two designated bench marks to demonstrate substantial service.**

License Transferability

- **We believe that the Security Agreement, Executed Note, Financial Background Check, and Criminal Record Check should be required of all potential license holders, partitionists and entities to which a portion of the spectrum is disaggregated or partitioned. We also believe that the Commission should monitor the records of license holder who are intrusted with public trusted spectrum. We also believe that all components of License ownership should be transferable, assigned, sold or given away to any other entity once the five year construction benchmark has been met in accordance with the provisions of 95.82 CFR.**

Spectrum Aggregation

- **We believe The 500 kilohertz spectrum capacity limit of one license per market makes these licenses nonviable and that 100 kilohertz spectrum capacity will attract more capital and manufacturing capacity.**

Partitioning and Disaggregation

- **We believe request for an authorization for partial assignment should include a description with full engineering at every 3 seconds along the NAD in degrees, minutes, and seconds, to the nearest second of latitude and longitude based on the North American Datum (NAD27)**

Technical Standards

• **We believe the Commission should relax the following technical restrictions, as requested by Petitioners: (a) limits on transmitter effective radiated power, including the 100 milliwatt power limitation on mobile RTUs; (b) CTS antenna height and transmitter power ratios, whether or not the CTS is located beyond a boundary line 10 miles outside the Grade B Contour of a TV Channel 13 station; and, (c² duty cycle limitations. We believe that enough proof and evidence exist to prove that the interference issues are over stated. We believe that by eliminating these overburdening regulations that the spectrum would be better served and technical standards would be brought into parity with other spectrums and services. We agree with the Commission that the evolution towards precise digital technologies both within the evolving 218-219 MHz, Digital Broadcast and High Definition Television, and AMTS 216-222 Mhz, will enable all spectrum technologies to monitor and control their respective spectrums and suppress all form of interference.**

Conclusion: We thank the Commission for their diligence and persistence in this Order and Notice of Proposed Rule Making for its comprehensive examination of the regulations governing the licensing and use of frequencies in the 218-219 MHz Band. We believe the goals of improving the efficiency of the spectrums use, while reducing the regulatory burden on license holders and users will encourage the rapid deployment of new services to the American Public. We believe that these changes will implement Congress's goal of giving small businesses the opportunity to participate in the provision of spectrum-based services in accordance with Section 309 (j) of the Communications Act of 1934, as amended in the Communications Act of 1998, It is evident and clear that the Commission is fulfilling its mandate to improve the efficiency of spectrum use, with the reduction of the regulatory burden on spectrum user, and the reduction unnecessary paper work on an understaffed and underpaid FCC . We believe these changes will open the door to new technologies and provide new industries to emerge which will serve the American public.

Thank You

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